

# SOFTWARE AND DATA PROCESSING SYSTEM WITH PRIORITY QUEUE DISPATCHING

## Abstract of the Disclosure

5 A dispatcher in a multiprogramming or multitasking operating system  
in a data processing system selects the next task to be executed by an  
available processor. Access to shared resources are controlled by locks and  
queues, where tasks are queued when they find the shared resource locked,  
and dequeued one by one as the lock is unlocked. When a lock is unlocked,  
10 the first task in a FIFO queue is dispatched with a temporary priority at least  
as high as any in the queue. This first task must retain this temporary  
urgency until it releases the resource or until its urgency is further increased  
due to the addition of a higher priority task to the resource queue or a  
dependent resource queue. This prevents starvation of higher priority tasks  
waiting in the FIFO queue.